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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/809,534

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Wei-Chung Shih

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EXAMINER

SEVER, ANDREW T

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/809,534	Applicant(s) SHIH ET AL.	
	Examiner Andrew T. Sever	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-14 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 10, 11 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claim 12 is withdrawn in view of the newly discovered reference(s) to Lee (6,636,339) and Aubuchon (US 6,900,922) in the 35 U.S.C § 103(a) rejection based on Lee in view of Aubuchon and Slobodin (as cited in the previous office action).

Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-7, 14, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 6,636,339) in view of Aubuchon (US 6,900,922.)

Lee teaches in figure 8 a projector for projecting an image to a projection plate (90), comprising:

A first digital mirror device (80), with a first micro-mirror disposed thereon;

A second digital mirror device (70); and

A projection light source (10-69, 71, and 72), emitting a projection beam towards the first digital micro-mirror device;

Wherein the first digital micro-mirror device (80) reflects the projection beam from the projection light source to the second digital micro-mirror device, the first micro-mirror is rotatable with respect to a vertical axis to adjust a horizontal position where the projection beam is projected on the second digital micro-mirror device (70), the second digital micro-mirror device reflects the projection beam from the first digital micro-mirror device to the projection plate and the second micro-mirrors are rotatable with respect to a horizontal axis to adjust a vertical position where the projection beam is projected on the projection plate. (See column 7 lines 1-22 that teach that first and second digital micro-mirror devices, which scan in perpendicular directions.)

Lee does not teach that the second digital micro-mirror device comprises of a plurality of second micro-mirrors disposed thereon. Aubuchon teaches in column 14 lines 15-61 that utilizing a plurality of micro-mirrors allows for greater adjustability and reduces light lost. Accordingly it would have been more obvious to one of ordinary skill in the art to utilize a plurality of second micro-mirror disposed thereon in the projector of Lee as taught by Aubuchon.

With regards to applicant's claims 2 and 4:

This is the structure of the digital micro-mirror device (see figures 3-6 of Aubuchon) for the structure of the device.

With regards to applicant's claims 3 and 6:

See column 11 lines 16-34 that teaches rotation of the mirrors at 10 degrees of Aubuchon (Aubuchon teaches that its obvious to replace both micro-mirror devices with a plurality of micro-mirrors disposed upon them for the same advantages as cited above and accordingly it would have been obvious to use the arrays and structure of the micro-mirror devices of Aubuchon in the projector of Lee.)

With regards to applicant's claim 5:

As shown in figure 9 the mirrors are arranged along a horizontal axis, furthermore within the structure of a single micro mirror device there is a plurality of micro-mirrors arrayed in a 2 dimensional matrix, which includes both horizontal and vertical axis.

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With regards to applicant's claim 7:

The light source of Lee is a laser.

With regards to applicant's claim 14:

It is obvious that a controller is attached to the light source(s) and first and second micro-mirror devices (see for example US 6,406,148 to Marshall et al. cited in the previous office action in figure 1 where a controller 114 is taught to drive the various components of the projector.)

With regards to applicant's claim 18:

All projectors are portable electronic apparatuses (you can move one between two locations even if the process of moving it is tedious.)

With regards to applicant's claim 19:

This is what is described in both Aubuchon and Lee that the plates do, which would require a controller to control it.

With regards to applicant's claim 20:

This is how laser projector's of the type taught by Lee function (either the actual light source pulses or else the modulators 61-63 turn the light source off and on.

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5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Aubuchon as applied to claims 1-7, 14, and 18-20 above, and further in view of Roddy et al. (US 6,882,356 as cited in the previous office action)

Lee in view of Aubuchon teaches a projector that among other things that its light source is a laser. Roddy teaches in figure 10 a projector which utilizes two lasers (60 and 61) which are specified to be LEDs in column 9 lines 52, however in column 9 lines 5-20, Roddy teaches that laser LEDs can use up to 10 time the rated DC current to produce a brighter or higher flux light beam than regular LEDs and as is well known LEDs utilize significantly less power than prior art light sources such as arc lamps and standard lasers. Roddy teaches in column 7 lines 32-56 that the wattage is in a range between 0.3 and 1.5 watts, which overlaps the claimed range. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize laser LEDs in the projector of Lee in view of Aubuchon as taught by Roddy, since laser LEDs utilize significantly less power than prior art light sources while being able to produce a bright image.

6. Claims 9, 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Aubuchon as applied to claims 1-7, 14, and 18-20 above, and further in view of Slobodin (US 2005/0062944 as cited in the previous office action.)

Lee in view of Aubuchon teaches in more detail above, a projector having a laser projection system which includes in figure 8 of Lee a color beam combining system (67b and 68b), however said system is not necessarily based on prisms. Slobodin teaches a

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prior art light source in figure 1 comprising of 3 light sources (102, 104, and 106) that are combined by a prism (108) before being transmitted to at least one light modulator.

Slobodin teaches in paragraphs 1-5 that such a light source has advantages over even earlier prior art light sources in that they use laser diodes or LEDS which are color, do not require warm up periods, and have other advantages over other prior art light sources such as a single laser as is taught by Lee. Accordingly since as taught by Slobodin such a design of light sources is well known and has certain advantages over prior art light sources, it would have been obvious to one of ordinary skill in the art to use such a system in the projector of Lee in view of Aubuchon as taught by Slobodin.

With regards to applicant's claim 12:

In view of Lee figure 8, it would have been obvious to include reflectors directing the light to the prism assembly in the projector of Lee in view of Aubuchon and Slobodin.

With regards to applicant's claim 13:

The light sources are red, green, and blue.

Allowable Subject Matter

7. Claims 10, 11, and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1-9, 12-14, and 18-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,154,259 to Hargis et al. teaches in figure 13 a projector with laser sources a color combiner and scanners (244 and 246).

US 6,603,588 to Hagelin et al. teaches a micro-mirror based projection system.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AS

William Perkey
Primary Examiner